PROCEDURES FOR TESTING OF ELECTRIC VEHICLE BATTERIES UNDER USABC

Tien Duong
U.S. Department of Energy

The USABC battery test procedures were developed to characterize the performance of advanced batteries for electric vehicle applications relative to the USABC mid term and long term requirements. The challenges were to develop procedures that must be independent of any battery technologies and automobile specifications. The procedures were prepared by a team composed of USABC and DOE National Laboratories personnel and based on the experience and methods developed at Argonne National Laboratory (ANL), Idaho National Engineering Laboratory (INEL) and Sandia National Laboratories (SNL). The procedures were organized into four groups: Prerequisites; Performance; Life Cycle; and Safety and Abuse. The prerequisites specify steps that should be performed to assure that information required for testing a new battery is available. The performance tests include all of the core tests which will be used to evaluate energy and power. The life cycle test define steps to verify life cycle by using a combination of various performance tests. The safety and abuse study was completed and specific test procedures are being developed. Hundreds of contract deliverables have finished testing, are being tested or are scheduled for future testing. Test results and post test analysis provide valuable information and are guiding program managers and developers on making program plans and where to focus their research and development efforts.